

Serial No.: 09/993,158  
Inventor(s): Higgins et al.

U.S. PTO Customer No. 25280  
Case No.: 5113D

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**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended): A carpet tile, comprising: a primary carpet, and a flame laminated backing composite including at least one of a layer of reinforcing material and a backing material respectively joined to at least one of an upper and lower surface of at least one layer of a preformed sheet of rebond foam cushion with a flame laminated junction therebetween, said flame laminated backing composite fixed at a position below said primary carpet by at least one adhesive layer of at least one adhesive material between said primary carpet and said flame laminated backing composite.

2. (Cancelled)

3. (Previously Presented): The invention as recited in claim 1, wherein said flame laminated backing composite includes a layer of reinforcing material and wherein said layer of reinforcing material is disposed at least partially within a mass of adhesive material such that at least a portion of said mass of adhesive material extends away from at least one side of said layer of reinforcing material.

4. (Currently Amended): The invention as recited in claim 1 [[2]], wherein the adhesive material comprises at least one of a thermoplastic and thermoset adhesive.

5. (Original): The invention as recited in claim 1, wherein the primary carpet is characterized by a face weight of about 12 - 60 oz/yd<sup>2</sup>.

6. (Original): The invention as recited in claim 1, wherein the surface covering has a plurality of corners wherein each of said corners has a cup of about 3/16" or less and a curl of about 1/16" or less.

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7. (Currently Amended): The invention as recited in claim 1 [[2]], wherein the adhesive layer is present at a level of less than or equal to about 100 oz/yd<sup>2</sup>.

8. (Currently Amended): The invention as recited in claim 1 [[2]], wherein the adhesive layer is present at a level of about 36 – 90 oz/yd<sup>2</sup>.

9. (Original): The invention as recited in claim 1, wherein the rebond foam cushion is characterized by a density of about 25 lbs. per cubic foot or less.

10. (Original): The invention as recited in claim 1, wherein the rebond foam cushion is characterized by a density of about 9 lbs. per cubic foot or less.

11. (Original): The invention as recited in claim 1, wherein the rebond foam cushion is characterized by an uncompressed chip size of about 25 mm or less.

12. (Original): The invention as recited in claim 11, wherein the uncompressed chip size is about 12 mm or less.

13. (Original): The invention as recited in claim 11, wherein the uncompressed chip size is about 7 mm or less.

14. (Previously Presented): The invention as recited in claim 1, wherein the rebond foam cushion is characterized by a binder quantity of about 25% or less.

15. (Original): The invention as recited in claim 14, wherein the binder content is about 15% or less.

16. (Original): The invention as recited in claim 14, wherein the binder content is

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about 10% or less.

17. (Currently Amended): The invention as recited in claim 1 [[2]], wherein the adhesive material comprises a hot melt adhesive.

18. (Original): The invention as recited in claim 1, wherein the primary carpet is characterized by a face weight of less than or equal to about 55 oz/yd<sup>2</sup>.

19. (Original): The invention as recited in claim 17, wherein the hot melt adhesive is present at a level of about 36 – 50 oz/yd<sup>2</sup>.

20. (Currently Amended): The invention as recited in claim 1 [[2]], wherein the adhesive material comprises a polyolefin based thermoplastic hot melt adhesive.

21. (Original): The invention as recited in claim 1, wherein the primary carpet is at least one of a tufted, bonded, flocked, needle punched, and woven carpet.

22. (Previously Presented): The invention as recited in claim 1, wherein the rebond foam cushion of said flame laminated backing composite is characterized by a thickness of about 25 mm or less.

23. (Previously Presented): The invention as recited in claim 22, wherein the foam cushion thickness is about 12 mm or less.

24. (Previously Presented): The invention as recited in claim 22, wherein the foam cushion thickness is about 4 mm or less.

25. (Currently Amended): The invention as recited in claim 1 [[2]], wherein the adhesive material comprises a polyurethane thermoset adhesive.

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26. (Previously Presented): The invention as recited in claim 1, wherein the flame laminated backing composite includes a backing material bonded to one surface of said at least one layer of rebond foam cushion via flame lamination.

27. (Original): The invention as recited in claim 1, wherein the primary carpet is a tufted carpet including pile yarn, primary backing, and a pre-coat adhesive.

28. (Original): The invention as recited in claim 1, wherein the primary carpet is a tufted carpet including pile yarn and a primary backing.

29. (Original): The invention as recited in claim 1, wherein the primary carpet is a bonded carpet including pile yarn and a backing material.

30. (Original): The invention as recited in claim 3, wherein said layer of reinforcing material comprises at least one of a porous scrim, woven, and non-woven material.

31. (Original): The invention as recited in claim 3, wherein said reinforcement material is formed of fiberglass.

32. (Original): The invention as recited in claim 3, wherein said reinforcement material comprises a porous textile structure.

33. (Original): The invention as recited in claim 3, wherein said reinforcement material consists essentially of polyester.

34. (Original): The invention as recited in claim 3, wherein said layer of reinforcing material comprises a plurality of glass fibers.

35. (Original): The invention as recited in claim 3, wherein said layer of reinforcing material comprises a plurality of polyester fibers.

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**Claims 36 - 37 (Cancelled)**

38. (Previously Presented): The invention as recited in claim 3, wherein said mass of adhesive material extends between said layer of reinforcing material and the underside of said primary carpet fabric.

**39. (Cancelled)**

40. (Original): The invention as recited in claim 1, wherein said rebond foam cushion is characterized by a density of about 6 to 12 lbs. per cubic foot.

41. (Currently Amended): A carpet tile, comprising: a primary carpet, a flame laminated backing ~~compsite~~composite including a layer of reinforcing material and a polyurethane rebond foam cushion comprising a preformed sheet of rebond foam and disposed at a position below said primary carpet, a mass of adhesive material disposed in bonding relation between said primary carpet and said layer of reinforcing material, said layer of reinforcing material bonded to at least one of an upper and lower surface of the rebond foam cushion via flame lamination.

42. (Previously presented): The invention as recited in claim 41, wherein the rebond foam cushion of the flame laminated backing composite is characterized by a density of about 25 lbs. per cubic foot or less.

43. (Original): The invention as recited in claim 42, wherein the primary carpet is characterized by a face weight of less than or equal to about 45 oz/yd<sup>2</sup>.

44. (Original): The invention as recited in claim 41, wherein the adhesive material is selected from at least one of thermoplastic and thermoset adhesives.

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45. (Original): The invention as recited in claim 41, wherein the surface covering is at least one of a carpet tile, attached cushion broadloom carpet, and roll product.

46. (Original): The invention as recited in claim 41, wherein the polyurethane rebond foam cushion comprises at most 25% polyurethane binder and at least 50% polyurethane foam chips.

47. (Original): The invention as recited in claim 41, wherein the polyurethane rebond foam cushion has a density of about 6 to 12 lb./cu. ft.

48. (Original): The invention as recited in claim 41, wherein the primary carpet is a tufted carpet including pile yarn and a primary backing.

49. (Previously Presented): The invention as recited in claim 41, wherein the flame laminated backing composite includes a textile backing material bonded to the underside of said polyurethane rebond foam cushion via flame lamination.

Claims 50 – 57 (Cancelled)

58. (Previously Presented) A dimensionally stable cushioned carpet tile suitable for disposition as discrete modular units across a flooring surface, the carpet tile comprising:

a primary carpet fabric having a pile side and a primary base with a plurality of pile forming yarns projecting outwardly from the pile side;

a flame laminated backing composite including a layer of stabilizing material and a rebond foam cushion layer disposed at a position below the primary carpet fabric; and

a bridging composite extending in bonding relation substantially between the primary base and an upper side of the rebond foam cushion layer wherein the bridging composite consists essentially of the layer of stabilizing material having a first side and

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a second side, a first layer of at least one resilient adhesive extending away from the first side of the stabilizing material into contacting relation with the primary base and the second side of the layer of stabilizing material bonded to the upper side of the rebond foam cushion layer via flame lamination.

59. (Original): The invention as recited in claim 58, wherein the primary carpet fabric is a tufted carpet and wherein the primary base comprises a primary backing and a layer of adhesive pre-coat extending across the underside of the primary backing.

60. (Original): The invention as recited in claim 59, wherein the adhesive pre-coat comprises at least one of a latex and hot melt adhesive.

61. (Original): The invention as recited in claim 60, wherein the hot melt adhesive is bitumen based hot melt adhesive.

62. (Original): The invention as recited in claim 60, wherein the hot melt adhesive is a polyolefin based hot melt adhesive.

63. (Original): The invention as recited in claim 58, wherein the resilient adhesive is at least one of a thermoset and thermoplastic.

64. (Original): The invention as recited in claim 58, wherein the primary carpet fabric is a bonded carpet.

65. (Previously presented): The invention as recited in claim 58, wherein the rebond foam cushion layer comprises polyurethane rebond foam characterized by a density of about 5 to 25 lbs. per cubic foot.

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66. (Previously presented): The invention as recited in claim 58, wherein the rebond foam cushion layer comprises polyurethane rebond foam characterized by a density of about 5 to 12 lbs. per cubic foot.

67. (Original): The invention as recited in claim 58, wherein the first layer of at least one resilient adhesive comprises a thermoplastic adhesive.

68. (Original): The invention as recited in claim 67, wherein said adhesive is bitumen based hot melt adhesive.

69. (Original): The invention as recited in claim 67, wherein said adhesive is a polyolefin based hot melt adhesive.

70. (Original): The invention as recited in claim 67, wherein said first layer of resilient adhesive is a thermoset adhesive.

71. (Original): The invention as recited in claim 58, wherein the primary base comprises a primary backing and a layer of latex adhesive pre-coat extending across the underside of the primary backing.

72. (Original): The invention as recited in claim 58, wherein the primary base comprises a primary backing and a layer of hot melt adhesive pre-coat extending across the underside of the primary backing.

Claims 73 – 76 (Cancelled)



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77. (Previously Presented): The invention as recited in claim 58, wherein the mass of the first layer of at least one resilient adhesive is not greater than about 100 ounces per square yard.

78. (Original): The invention as recited in claim 58, wherein the stabilizing material comprises a sheet of non-woven fiber glass.

79. (Previously Presented): The invention as recited in claim 58, wherein the first layer of at least one resilient adhesive comprises a hot.

80. (Cancelled)

81. (Previously Presented): The invention as recited in claim 58, wherein the flame laminated backing composite further includes a backing structure bonded to the lower side of the rebond foam cushion layer via flame lamination.

82. (Previously Presented): The invention as recited in claim 58, further comprising a backing structure of a multi-component backing below said rebond foam cushion layer.

83. (Previously Presented): The invention as recited in claim 82, wherein said multi-component backing comprises a layer of adhesive disposed adjacent the lower side of the rebond foam cushion layer.

84. (Previously Presented) The invention as recited in claim 83, wherein said layer of adhesive disposed adjacent the lower side of the rebond foam cushion layer is present at a level of not greater than about 40 ounces per square yard.

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85. (Previously Presented): The invention as recited in claim 82, wherein said backing structure includes a quick release backing.

Claims 86 – 87 (Cancelled)

88. (Currently Amended): A carpet tile comprising a carpet layer and a backing attached thereto and having at least one flame laminated backing composite including at least one of a layer of reinforcing material and a backing material joined to a layer comprised of a preformed sheet of compressible foam particles bonded together.

89. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer comprised of compressible foam particles bonded together has an internal tear strength of at least 3 lbs.

90. (Previously Presented): The carpet tile as recited in claim 88, wherein the layer of compressible foam particles bonded together is a compressed particle foam having a compressibility of less than 100% of the foam thickness at 40 psi.

91. (Original): The carpet tile as recited in claim 88, wherein said carpet tile has an appearance retention rating of at least 4.0 after 4,000 cycles.

92. (Original): The carpet tile as recited in claim 91, having an appearance retention rating of at least 3 after 12,000 cycles.

93. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer comprised of compressible foam particles bonded together is at least one of a cut, slit and peeled foam.

94. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer

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of compressible foam particles has a recycled content of at least 85%.

95. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer comprised of compressible foam particles bonded together is an open celled foam comprised of open celled foam particles bonded together.

96. (Original): The carpet tile as recited in claim 95, wherein the open celled foam is comprised of foamed polyurethane.

97. (Previously Presented): The carpet tile as recited in claim 88, wherein said foam particles bonded together have an average uncompressed chip size of 25 mm or less.

98. (Cancelled)

99. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer of compressible foam particles has a recycled content of at least 50%.

100. (Original): The carpet tile as recited in claim 88, having a hexapod rating >2.0 at 12,000 cycles.

101. (Cancelled)

102. (Previously Presented): The carpet tile as recited in Claim 88, wherein said layer comprised of compressible foam particles bonded together is one layer of a flame laminated carpet backing.

103. (Original): The carpet tile as recited in claim 88, having an initial Gmax of less than 125.

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104. (Original): The carpet tile as recited in claim 88, having a cushion weight of less than 32 oz/yd<sup>2</sup> and an initial Gmax less than 125.

105. (Previously Presented): The carpet tile as recited in claim 88, wherein the layer of compressible foam particles bonded together has at least one of a honey-combed, reticulated, and skeletal open cell structure.

106. (Previously Presented): The carpet tile as recited in claim 88, wherein the layer of compressible foam particles bonded together has a structure of randomly placed particles bonded together in a compressed state.

107. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer of compressible foam particles bonded together is substantially free of any filler.

108. (Previously Presented): The carpet tile as recited in claim 88, wherein said compressible foam particles of said layer of compressible foam particles bonded together are substantially 100% recycled content.

109. (Original): The carpet tile as recited in claim 88, wherein the compressible particles are bonded together with an adhesive.

110. (Original): The carpet tile as recited in claim 109, wherein said adhesive contains at least one additive, agent or compound selected from flame retardant, anti-bacterial, color, anti-microbial, anti-fungal, conductive, anti-static, fibers, filler, recycled materials, and combinations thereof.

111. (Previously Presented): The carpet tile as recited in claim 88, wherein the compressible foam particles are bonded together in a compressed state.

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112. (Previously Presented): The carpet tile as recited in claim 88, wherein said tile includes a plurality of layers of compressible foam particles bonded together.

113. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer of compressible foam particles bonded together has at least one lateral surface which is cut, peeled, or slit.

114. (Original): The carpet tile as recited in claim 88, wherein the carpet layer includes at least one of woven, tufted, or bonded carpet.

115. (Previously Presented): The carpet tile as recited in claim 88, wherein said layer of compressible foam particles bonded together has air permeability.

116. (Original): The carpet tile as recited in claim 88, wherein the backing is a multilayer backing.

117. (Previously Presented): The carpet tile as recited in claim 88, wherein the flame laminated backing composite includes a stabilizing layer flame laminated to one surface of the compressible foam particles bonded together.

118. (Previously Presented): The carpet tile as recited in claim 88, wherein the compressed foam particle layer has a thickness of less than 8 mm.

119. (Original): The carpet tile as recited in claim 88, wherein the tile has an overall height of less than 10 mm.

120. (Original): The carpet tile as recited in claim 88, having a caster chair rating of >2.3.

121. (Original): The carpet tile as recited in claim 88, having an EN 1307 rating of >2.

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122. (Original): The carpet tile as recited in claim 88, having a Herzog walking comfort rating for contract use (DIN 54327) of >0.70.

123. (Currently Amended): A cushion back carpet tile comprising a carpet layer and a cushion back attached thereto and having at least one flame laminated backing composite including at least one of a layer of reinforcing material and a backing material joined to at least one layer comprised of a preformed sheet of foamed polyurethane particles bonded together.

124. (Original): The cushion back carpet tile as recited in claim 123, wherein said layer comprised of foamed polyurethane particles bonded together has an internal tear strength of at least 3 lbs.

125. (Original): The cushion back carpet tile as recited in claim 123, wherein said layer comprised of foamed polyurethane particles bonded together has a thickness of about 2 to 20 mm.

126. (Original): The cushion back carpet tile as recited in claim 123, wherein said layer comprised of foamed polyurethane particles bonded together has a compressibility of less than 100% at 40 psi.

127. (Original): The cushion back carpet tile as recited in claim 123, wherein said tile has an appearance retention rating of at least 4 at 4,000 cycles.

128. (Original): The cushion back carpet tile as recited in claim 123, wherein said tile has an appearance retention rating of at least 3 at 12,000 cycles.

129. (Cancelled)

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130. (Currently Amended): A foam backed carpet tile with a flame laminated backing composite including at least one of a layer of reinforcing material and a backing material joined to at least one layer of open celled foam comprised of a preformed sheet of foamed polyurethane particles bonded together.

131. (Previously Presented): The foam backed carpet tile of claim 130 wherein said foamed polyurethane particles have an average uncompressed particle size of 15 mm or less.

Claims 132 – 133 (Cancelled)

134. (Currently Amended): A foam backed carpet tile with a flame laminated backing composite including at least one of a layer of reinforcing material and a backing material joined to at least one layer of a preformed sheet of bonded chips of resilient foam material being attached to a textile face and said tile having an initial Gmax of less than 125.

135. (Previously Presented): The cushion backed carpet tile of claim 134, with a foam density of less than 25 lbs. per cubic foot.

136. (Currently Amended): A cushion backed carpet tile with a carpet layer and a flame laminated backing composite including at least one of a layer of reinforcing material and a backing material joined to a skeletal structured flame laminated foam cushion.

137. (Cancelled)

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138. (Currently Amended): A carpet tile comprising a carpet layer and a flame laminated backing composite attached thereto and having at least one of a layer of reinforcing material and a backing material joined to at least one layer comprised of foamed open cell particles bonded together.

139-140. (Cancelled)

141. (Currently Amended): A cushion back carpet tile comprising a carpet layer, a stabilizing layer, and a flame laminated cushion back composite having at least one of a layer of reinforcing material and a backing material joined to at least one layer comprised of preformed compressible foam particles bonded together.

Claims 142-150 (Cancelled)

151. (Previously Presented) The invention as recited in claim 3, wherein said layer of reinforcing material is bonded to one surface of the rebond foam cushion via flame lamination.